

CLAIMS

What is claimed is:

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1. A dielectric barrier discharge lamp having

- a discharge vessel, the wall of which encloses a discharge medium,

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- a set of electrodes for generating dielectric barrier discharges in the discharge medium, with a dielectric barrier action in respect of at least some of the set of electrodes,

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- a phosphor mixture, which is applied to part of the wall of the discharge vessel,

- a phosphor mixture comprising the following phosphor components:

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R: (Y,Gd)BO₃:Eu,

G: LaPO₄:(Tb) or LaPO₄:(Ce,Tb),

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B: BaMgAl₁₀O₁₇:Eu

whereby

30 the following applies to the proportions by weight formed by the phosphor components R, G, B in the mixture:

$0.05 \leq R \leq 0.15$, $0.50 \leq G \leq 0.70$, $0.20 \leq B \leq 0.40$ and $R+G+B=1$.

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2. The dielectric barrier discharge lamp as claimed in claim 1, in which the following applies to the proportions by weight in the mixture:

$0.06 \leq R \leq 0.12$, $0.58 \leq G \leq 0.66$, $0.25 \leq B \leq 0.35$ and $R+G+B=1$.

3. The dielectric barrier discharge lamp as claimed
in claim 1, in which the discharge vessel contains
5 xenon as discharge medium.

4. The dielectric barrier discharge lamp as claimed
in claim 3, in which the xenon filling pressure is in
the range between 50 and 200 mbar.

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5. The dielectric barrier discharge lamp as claimed
in claim 3, in which the xenon filling pressure is in
the range between 100 and 150 mbar.

15 6. The dielectric barrier discharge lamp as claimed
in one of the preceding claims, in which the discharge
vessel is formed to be flat and comprises a back plate
and a front plate for the light to emerge, which is at
least partly transparent to light.

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7. The dielectric barrier discharge lamp as claimed
in one of claims 1 to 5, in which the discharge vessel
is tubular.

25 8. The dielectric barrier discharge lamp as claimed
in claim 6, having a dielectric layer between at least
part of the set of electrodes and the discharge medium.

9. The dielectric barrier discharge lamp as claimed
30 in claim 8, in which the set of electrodes comprises
two or more elongate electrodes which are arranged on
the wall of the discharge vessel.

10. The use of a dielectric barrier discharge lamp
35 with a color temperature of 10,000 K or above for
viewing X-rays.

11. The use as claimed in claim 10, wherein the color temperature is more than 20,000 K, preferably more than 30,000 K, particularly preferably more than 40,000 K.

- 5 12. The use as claimed in claim 10, wherein the dielectric barrier discharge lamp has the features described in one of claims 1 to 9.